

Form PTO-1449 (modified)

Atty. Docket No.
12740.0232.NPUS01Serial No.
09/990,578

List of Patents and Publications for Applicant's

Applicant
Wallace L. McKeehan and Yongde Luo

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INFORMATION DISCLOSURE STATEMENT

Filing Date:
November 21, 2001Group: JAN 07 2003
1623

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U.S. Patent Documents

Foreign Patent Documents

Other Art

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U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
MCH	A10	5,707,632	01/13/98	Williams et al.	424	198.1	06/02/95
	A12	5,795,875	08/18/98	Holme et al.	514	56	01/09/97
	A11	5,801,063	09/01/98	Grandics et al.	436	518	05/09/95
	A13						
	A14						

Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No
MCH	B2	WO 01/34641 A2	05/17/01	PCT			
	B3						

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
MCH	C55	S. Uhrich, O. Lagente, J. Choay, Y. Courtois and M. Lenfant; "Structure Activity Relationship in Heparin: Stimulation of Non-Vascular Cells by a Synthetic Heparin Pentasaccharide in Cooperation with Human Acidic Fibroblast Growth Factors"; September 16, 1986, Biochemical and Biophysical Research Communications, Vol. 139, No. 2; pages 728-732.
MCH	C56	Pauline Wong and Wilson H. Burgess; "FGF2-Heparin Co-crystal Complex-assisted Design of Mutants FGF1 and FGF7 with Predictable Heparin Affinities"; July 17, 1998; The Journal of Biological Chemistry, Vol. 273, No. 29, pp. 18617-18622.
MCH	C57	Hyae Gyeong Cheon; "Effect of Heparin on the High Affinity KGF and aFGF Binding to the Chimeric KGFR-HFc"; May 31, 1996; J. Biochem. Mol. Biol., Vol. 29, No. 3, pp. 205-209.

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Exam. Init.	Ref. Des.	Citation
M.C.H.	C58	Sheng Ye, Yongde Luo, Weiqin Lu, Richard B. Jones, robert J.Linhardt, Ishan Capila, Toshihiko Toida, Mikio Kan, Huguette Pellitier and Wallace L. McKeehan; "Structural Basis for Interaction of FGF-1, FGF-2 and FGF-7 with Different Heparan Sulfate Motifs"; November 6, 2001, Biochemistry 2001, 40, pages 14429-14439.
	C59	

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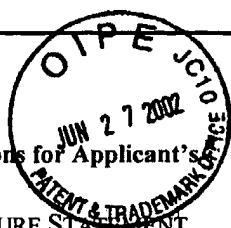
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U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
M.C.H.	A1	5,965,530	10/12/99	Pierce et al.			
	A2	6,183,784	2/6/01	Read et al.			
	A3	5,843,883,	12/1/98	Gospodarowicz et al.			
	A4	5,034,520	7/23/91	Lormeau et al.			
	A5	5,807,982	9/15/98	McCaffrey et al.			
	A6	6,074,848	6/13/00	Gospodarowicz et al.			
	A7	5,655,870	9/9/1997	Rubin et al.			
	A8	5,891,655	4/6/1999	Ornitz			
M.C.H.	A9	6,127,347	10/3/2000	Chaudry et al.			

Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No
	B1	WO 98/16642	4/23/1998	WIPO	—	—	
	B2				—	—	

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
M.C.H.	C1	Cook N. et al.; "Platelet Factor 4 Efficiently Reverses Heparin Anticoagulation in the Rat Without Adverse Effects of Heparin-Protamine Complexes" (1992) Circulation 85:1102-1109.
M.C.H.	C2	DiGabriele, A. D., et al.; "Structure of a Heparin-linked Biologically Active Dimer of Fibroblast Growth Factor" (1998) Nature 393, 812-817.

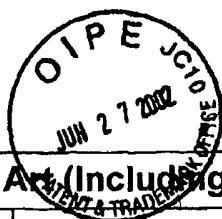


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TECH CENTER 1600/2900

Exam. Init.	Ref. Des.	Citation
M.C.H.	C3	Faham, S., et al.; "Diversity Does Make a Difference: Fibroblast Growth Factor-Heparin Interactions" (1998) Curr. Opin. Struct. Biol. 8, 578-586.
	C4	Guimond, S., et al.; "Activating and Inhibitory Heparin Sequences for FGF-2 (Basic FGF)" (1993) J. Biol. Chem. 268, 23906-23914.
	C5	Guimond, S. E., and Turnbull, J. E.; "Fibroblast Growth Factor Receptor Signalling is Dictated By Specific Heparan Sulphate Saccharides" (1999) Curr. Biol. 9, 1343-1346.
	C6	Herr, A. B., et al.; "Heparin-Induced Self-Association of Fibroblast Growth Factor-2" (1997) J. Biol. Chem. 272, 16382-16389.
	C7	Ishihara, M., et al.; "Importance of 2-O-Sulfate Groups of Uronate Residues in Heparin for Activation of FGF-1 and FGF-2" (1997) J. Biochem. (Tokyo) 121, 345-349.
	C8	Jang, J. H., et al.; "Heparan Sulfate is Required for Interaction and Activation of the Epithelial Cell Fibroblast Growth Factor Receptor-2IIIb with Stromal-Derived Fibroblast Growth Factor-7" (1997) In Vitro Cell Dev. Biol. Anim., 33, 819-24.
	C9	Edmunds, T. et al.; "Transgenically Produced Human Antithrombin: Structural and Functional Comparison to Human Plasma-Derived Antithrombin" (1998) Blood, 91, 4561-4571.
	C10	Kan, M., et al.; "Specificity for Fibroblast Growth Factors Determined by Heparan Sulfate in a Binary Complex with the Receptor Kinase" (1999) J. Biol. Chem. 274, 15947-15952.
	C11	Kan, M., et al.; "An Essential Heparin-Binding Domain in the Fibroblast Growth Factor Receptor Kinase" (1993) Science 259, 1918-1921.
	C12	Kan, M. et al.; "Divalent Cations and Heparin/Heparan Sulfate Cooperate to Control Assembly and Activity of the Fibroblast Growth Factor Receptor Complex" (1996) J. Biol. Chem. 271, 26143-26148.
	C13	Kato, M. et al.; "Physiological Degradation Converts the Soluble Syndecan-1 Ectomdomain from an Inhibitor to a Potent Activator of FGF-2" (1998) Nat. Med. 4, 691-697.
	C14	Kim, P. J., et al.; "Colocalization of Heparin and Receptor Binding Sites on Keratinocyte Growth Factor" (1998) Biochemistry 37, 8853-8862.
	C15	Lindahl, U., et al.; "Regulated Diversity of Heparan Sulfate" (1998) J. Biol. Chem. 273, 24979-24982.
	C16	Lookene, A., et al.; "Interaction of Lipoproteins with Heparan Sulfate Proteoglycans and with Lipoprotein lipase. Studies by Surface Plasmon Resonance Technique" (1997) Biochemistry 36, 5267-5275.
	C17	Lu, W., et al.; "Fibroblast Growth Factor-10" (1999) [published erratum appears in J. Biol. Chem. (1999) 274, 28058] J. Biol. Chem. 274, 12827-12834.
M.C.H.	C18	Luo, Y., et al.; "Molecular Modeling and Deletion Mutagenesis Implicate the Nuclear Translocation Sequence in Structural Integrity of Fibroblast Growth Factor-1" (1996) J. Biol. Chem. 271, 26876-26883.

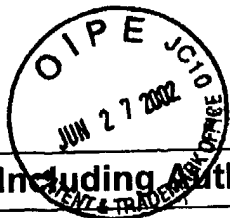


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Other Art (Including Author, Title, Date Pertinent Pages) **GEN CENTER 1600/2900**

Exam. Init.	Ref. Des.	Citation
M.C.H.	C19 ✓	Luo, Y., et al.; "The Glycine Box: A Determinant of Specificity for Fibroblast Growth Factor" (1998) <i>Biochemistry</i> 37 , 16506-16515.
	C20 ✓	McKeehan, W. L., et al.; "The Heparan Sulfate-Fibroblast Growth Factor Family: Diversity of Structure and Function" (1998) <i>Prog. Nucleic Acid Res. Mol. Biol.</i> 59 , 135-176.
	C21 ✓	McKeehan, W. L., et al.; "Requirement for Anticoagulant Heparan Sulfate in the Fibroblast Growth Factor Receptor Complex" (1999) <i>J. Biol. Chem.</i> 274 , 21511-21514.
	C22 ✓	Mikhailov, D., et al.; "NMR Solution Conformation of heparin-Derived Hexasaccharide" (1997) <i>Biochem. J.</i> 328 , 51-61.
	C23 ✓	Moy, F. J., et al.; "Properly Oriented Heparin-Decasaccharide-Induced Dimers are the Biologically Active Form of basic Fibroblast Growth Factor" (1997) <i>Biochemistry</i> 36 , 4782-4791.
	C24 ✓	Ornitz, D. M., et al.; "FGF Binding and FGF Receptor Activation by Synthetic Heparan-Derived Di- and Trisaccharides" (1995) <i>Science</i> 268 , 432-436.
	C25 ✓	Ornitz, D. M.; "FGFs, Heparan Sulfate and FGFRs: Complex Interactions Essential for Development" (2000) <i>Bioessays</i> 22 , 108-112.
	C26 ✓	Pellegrini, L. et al.; "Crystal Structure of Fibroblast Growth Factor Receptor Ectodomain Bound to Ligand and Heparin" (2000) <i>Nature</i> , 407 , 1029-1034.
	C27 ✓	Rezaie, A. R., and Olson, S. T.; "Calcium Enhances Heparin Catalysis of the Antithrombin-Factor Xa Reaction by Promoting the Assembly of an Intermediate Heparin - Antithrombin - Factor Xa Bridging Complex. Demonstration by Rapid Kinetics Studies" (2000) <i>Biochemistry</i> 39 , 12083-12090.
	C28 ✓	Ron, D. et al.; "Expression of Biologically Active Recombinant Keratinocyte Growth Factor" (1993) <i>J. Biol. Chem.</i> 268 , 2984-2988.
	C29 ✓	Rosenberg, R. D., et al.; "Perspectives Series: Cell Adhesion in Vascular Biology; Heparan Sulfate Proteoglycans of the Cardiovascular System" (1997) <i>J. Clin. Invest.</i> 99 , 2062-2070.
	C30 ✓	Schlessinger, J. et al.; "Crystal Structure of a Ternary FGF-FGFR-Heparin Complex Reveals a Dual Role for Heparin FGRF Binding and Dimerization" (2000) <i>Mol. Cell.</i> 6 , 743-750.
	C31 ✓	Shriver, Z., et al.; "Sequencing of 3-O Sulfate Containing Heparin Decasaccharides with a Partial Antithrombin III Binding Site" (2000) <i>Proc. Natl. Acad. Sci. USA</i> , 97 , 10359-10364.
	C32 ✓	Shriver, Z. et al.; "Cleavage of the Antithrombin III binding site in Heparin by Heparinases and its Implication in the Generation of Low Molecular Weight Heparin" (2000) <i>Proc. Natl. Acad. Sci. USA</i> , 97 , 10365-10370.
M.C.H.	C33 ✓	Toida, T., et al.; "Enzymatic Preparation of Heparin Oligosaccharides Containing Antithrombin III Binding Sites" (1996) <i>J. Biol. Chem.</i> 271 , 32040-32047.



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Other Art (Including Author, Title, Date Pertinent Pages, Etc.) **UL 1 2002**

TECH CENTER 1600/2900

Exam. Init.	Ref. Des.	Citation
M-C H	C34 ✓	Uematsu F, et al.; "Ligand Binding Properties of Binary Complexes of Heparin and Immunoglobulin-like Modules of FGF Receptor 2" (2000) Biochem. Biophys. Res. Commun. 272 , 830-836.
	C35 ✓	Vlodavsky, I., et al.; "Involvement of Heparan Sulfate and Related Molecules in Sequenstration and Growth promoting Activity of Fibroblast Growth Factor" (1996) Cancer Metastasis Rev. 15 , 177-186.
	C36 ✓	Waksman, G., and Herr, A. B.; "New Insights into Heparin-Induced FGF Oligomerization" (1998) Nat. Struct. Biol. 5 , 527-530.
	C37 ✓	Wang, F., et al.; "Alternately Spliced NH ₂ - Terminal Immunoglobulin-like Loop I in the Ectodomain of the Fibroblast Growth Factor (FGF) Receptor 1 Lowers Affinity for Both Heparin and FGF-1" (1995) J. Biol. Chem. 270 , 10222-10230.
	C38 ✓	Wang, F., et al.; "Common and Specific Determinants for Fibroblast Growth Factors in the Ectodomain of the Receptor Kinase Complex" (1999) Biochemistry 38 , 160-171.
	C39 ✓	Ye, S., et al.; "Exon Switching and Activation of Stromal and Embryonic Fibroblast Growth Factor (FGF)-FGF Receptor Genes in Prostate Epithelial Cells Accompany Stromal Independence and Malignancy" (2001) Biochemistry 40 , 14429-14439.
	C40 ✓	J. Choay, et al.; "Structure-Activity Relationship in Heparin: A Synthetic Pentasaccharide with High Affinity for Antithrobin III and Eliciting High Anti-Factor Xa Activity" (1983) Biochemical and Biophysical Research Communications, Vol. 116, No. 2, 492-499
	C41 ✓	Duraikkannu Loganathan, et al.; "Structural Variation in the Antithrombin III Binding Site Region and Its Occurrence in Heparin from Different Sources" (1990) Biochemistry 29 , 4362-4368.
	C42 ✓	Alireza R. Rezaie, "Heparin-Binding Exosite of Factor Xa" (2000) TCM Vol. 10, No. 8, 333-338.
	C43 ✓	Tahir Ahmed, et al., "Inhibition of Allergic Late Airway Responses by Inhaled Heparin-Derived Oligosaccharides" (2000) J. Appl. Physiol 88 , 1721-1729.
	C44 ✓	E. Sache, et al.; "Partially N-Desulfated Heparin as a Non-Anticoagulant Heparin: Some Physico-Chemical and Biological Properties" (1989) Thrombosis Research 55 , Vol. 55, No. 2, 247-258.
	C45 ✓	Guangli Yu, et al.; "Heparinase I Acts on a Synthetic Heparin Pentasaccharide Corresponding to the Antithrombin III Binding Site" (2000) Thrombosis Research 100 , 549-556.
M-C H	C46 ✓	Allison Fryer, et al.; "Selective O-Desulfation Produces Nonanticoagulant Heparin that Retains Pharmacological Activity in the Lung ^{1,2} " (1997) The Journal Of Pharmacology and Experimental Therapeutics, Vol. 282, No. 1, 282 , 208-219.



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Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
M.C.H.	C47	Peter C. Kouretas, et al.; "Non-Anticoagulant Heparin Increases Endothelial Nitric Oxide Synthase Activity: Role of Inhibitory Guanine Nucleotide Proteins" (1998) J Mol Cell Cardiol 30, 2669-2682.
	C48	Shinobu Mochizuki, et al.; "Expression and Characterization of Recombinant Human Antithrombin III in Pichia Pastoris" (2001) Protein Expression and Purification 23, 55-65.
	C49	Alexander N. Plotnikow, et al.; "Crystal Structure of Fibroblast Growth Factor 9 Reveals Regions Implicated in Dimerization and Autoinhibition" (2001) The Journal of Biological Chemistry, Vol. 276, No. 6, 4322-4329.
	C50	Paola Bellosta, et al.; "Identification of Receptor and Heparin Binding Sites in Fibroblast Growth Factor 4 by Structure-Based Mutagenesis" (2001) Molecular and Cellular Biology, 5946-5957.
	C51	David A. Pye, et al.; "Regulation of FGF-1 Mitogenic Activity by Heparan Sulfate Oligosaccharides is Dependent on Specific Structural Features: Differential Requirements for the Modulation of FGF-1 and FGF-2" (2000) Glycobiology, Vol. 10, No. 11, 1183-1192.
	C52	J.N. Shanberge, et al.; "Interrelationship of Protamine and Platelet Factor 4 in the Neutralization of Heparin" (1987) Thrombosis Research 46, 89-100.
	C53	Man-Chiu Poon, et al.; "Platelet Factor Four and Protamine Sulfate Neutralization of Heparin Fractionated According to Anionic Charge Density" (1982) Thromb Haemostas (Stuttgart) 47 (2), 162-165.
M.C.H.	C54	Thierry Burnouf, et al.; "Affinity Chromatography in the Industrial Purification of Plasma Proteins for Therapeutic Use" (2001) J. Biochem. Biophys. Methods 49, 575-586.

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